HIGH-THROUGHPUT BIOMOLECULAR CRYSTALLIZATION AND BIOMOLECULAR CRYSTAL SCREENING

ABSTRACT OF THE DISCLOSURE

The present invention provides a method for the acoustic ejection of fluid droplets from fluid-containing reservoirs to form arrays suitable for high-throughput combinatorial crystallization experiments. Such arrays may utilize very small fluid volumes, in the order of picoliters. The method is especially suited to preparing combinatorial libraries useful in developing techniques for crystallizing biomacromolecules, such as proteins. The small volumes conserve macromolecules that may be costly and rare, and permit the testing of a large number of experimental crystallization conditions for a given amount of a macromolecule. The time required for the experiments may be very short due to the small volumes. The invention is conducive to forming high-density microarrays of small volume crystallization experiments. Acoustic detection of crystals *in situ*, and distinction between biomacromolecular and non-biomacromolecular crystals, are also taught.